ENVIRON

October 5, 2004

Mr. Dion Novak
Superfund Division
United States Environmental Protection Agency
77 West Jackson Boulevard
Mail Code: SR-6J
Chicago, Illinois 60604

Re: August 2004 Human Health Risk Assessment
Remedial Investigation/Feasibility Study
Eagle Zinc Company Site, Hillsboro, Illinois

Dear Mr. Novak:

This letter transmits the pages of the above-referenced document that were revised by ENVIRON based on additional comments contained in the United States Environmental Protection Agency's (USEPA's) approval letter dated September 21, 2004. In addition to the replacement pages, a response is provided for each USEPA comment. Each comment is repeated below in italics, followed by ENVIRON's response.

Assessment of potential off-site impacts and offsite exposure pathways from windblown dust. *This issue has arisen in several different ways during this investigation. The PRPs' general response is that the sampling was adequate for IEPA's purposes and was included as such in the Phase I Technical Memorandum EPA has asked several times for a more complete demonstration that would support the conclusion that there is no offsite migration of dust from the site or the residue piles. EPA has been clear that the demonstration must include data like a wind rose diagram or an evaluation of whether the soil sampling is adequate for an off-site air pathway analysis As the wind rose diagram has not been provided, it is not possible to complete an evaluation of the adequacy of the off-site sampling. Also, it is unclear at present whether additional sampling will be required in the on-site residue piles. This data, if necessary, would also be presented in the off-site pathway analysis*

This analysis must be provided in the Remedial Investigation report before this pathway can be completely analyzed. At present, this pathway is not incomplete- please make this notation in the text

Response: Contrary to the above statements, we note that a wind rose diagram for the site area was provided in the Phase 1 Technical Memorandum as Appendix D. This diagram supported the discussions in that document concerning the wind-dust migration pathway. From our recent e-mail exchanges on this subject, we understand that USEPA is not requiring additional investigation of the windblown dust pathway at this time. The wind rose diagram, as well as a detailed compilation of all information previously provided to the Agency concerning this issue, will be provided in the Remedial

Investigation Report. In addition, the RI Report will contain a discussion about the residue materials.

Calculation of on-site exposure point concentrations in soil based on site-wide average concentrations. *In response to EPA comments, the PRPs stated that representative concentrations of COPCs in on-site soil were calculated using all soil samples collected on-site. The underlying assumption is that on-site receptors can move across the site, throughout their exposure period. On page 10, par 2, 2nd sentence, of the revised assessment, the following changes should be made "~~because~~ These areas do not currently represent actual or anticipated human activity patterns. For purposes of this HHRA, it is assumed that a receptor would uniformly contact affected media across the entire site Therefore, it is assumed that the representative concentration a receptor could be exposed to is the upper confidence limit on the average across the entire site. However, if an individual's activities were confined to a more limited portion of the site, potential exposures and risks could be different than projected in this HHRA, depending on the individual's location and concentrations in soil at that location. Sample ~~receptor presence is considered equally likely in all areas, and sample~~ locations were biased to locations exhibiting elevated XRF field screening levels, all available soil data were combined to calculate representative concentrations of soil COPCs for use in the HHRA."*

Response: The revisions noted above were made to the report text. Replacement pages are attached.

Calculation of exposure point concentrations. *In several cases, the use of ProUCL to verify the 95% UCL concentrations provided different concentrations, in most cases, this appears to have occurred because the HHRA defaulted to a distribution free UCL, even in cases where that selection may not have been appropriate Though the HHRA cites the latest EPA guidance for calculating exposure point concentrations, OSWER 9285.6-10 – 12/02, it does not appear that the calculations were developed in accordance with that guidance Please provide an explanation for the variance and whether addressing the comment will change any of the conclusions presented in this revision.*

Response: Based upon the above comment, ENVIRON has estimated the upper confidence limit (UCL) for all reported soil and groundwater data using the most recent version of ProUCL (version 3.0), EPA's software developed for implementation of the 2002 guidance for calculating representative concentrations. The raw data used to estimate these UCLs were presented in Tables C-1 and C-3 of the original HHRA. Presented in Table 1 is a comparison of the UCLs calculated by ProUCL and those previously estimated by ENVIRON. A ratio of the UCL recommended by ProUCL to the ENVIRON estimated UCL is presented in the last column. For soil, the differences are negligible and would not affect any of the conclusions regarding potential health effects. For some analytes in groundwater, the differences between the UCLs calculated using ProUCL and those previously estimated are more pronounced. The reason for this discrepancy is that ProUCL provides a larger number of distribution types, e.g. gamma and various non-parametric evaluations, while ENVIRON limited its estimations to the major distribution types: normal, lognormal, and non-parametric jackknife procedure.

Given the uncertainty associated with assigning distribution types to limited environmental data sets, we do not believe that either approach is clearly superior. Only the Construction Worker scenario was identified as having a potentially complete exposure pathway from groundwater (*i.e* , direct contact during excavation). To evaluate the impact of using the UCLs recommended by ProUCL, risk and hazards for this receptor were recalculated (Table 2). As shown in Table 2, although hazard/risk associated with the groundwater contact pathway increased by a factor of 2.6, the estimated extra lifetime cancer risk and estimated non-carcinogenic hazard over all media increased by less than 15%. Therefore, the HHRA's conclusion that no adverse health effects are expected if a construction worker were exposed to Site media does not change due to the use of UCLs derived using ProUCL. Indeed, the conclusion would also stand if the maximum detection concentrations in groundwater were used in place of the UCLs.

If you have any questions concerning this submission, please do not hesitate to contact us.

Sincerely,

ENVIRON International Corporation

F. Ross Jones

F. Ross Jones, P.G.
Manager

FRJ:rms
R:\Client Project Files\Eagle Zinc-Hillsboro_21-7400E\Risk Assessment\HHRA_2004\Final Draft HHRA_Aug 04\Response to Cmnts Ltr_FINAL 100504.doc

Attachment

cc: Thomas Krueger, Esq. – USEPA, Region 5
Rick Lanham – IEPA Bureau of Land
Chris English – CH2M Hill
John Ix, Esq. – Dechert
Lois Kimbol, Esq. – Dechert
Paul Harper – Eagle-Picher
Gordon Kuntz – Sherwin-Williams
Roy Ball – ENVIRON
Janet Kester – ENVIRON

ENVIRON

October 5, 2004

Mr. Dion Novak
Superfund Division
United States Environmental Protection Agency
77 West Jackson Boulevard
Mail Code: SR-6J
Chicago, Illinois 60604

Re: August 2004 Ecological Risk Screening Evaluation
Remedial Investigation/Feasibility Study
Eagle Zinc Company Site, Hillsboro, Illinois

Dear Mr. Novak:

This letter transmits the pages of the above-referenced document that were revised by ENVIRON based on additional comments contained in the United States Environmental Protection Agency's (USEPA's) approval letter dated September 21, 2004. In addition to the replacement pages, a response is provided for each USEPA comment. Each comment is repeated below in italics, followed by ENVIRON's response.

General Comments

Additional documentation is needed in the SLERA for habitat quality and the level of biological impairment in the on-site drainage ways because the hazard quotients calculated for these areas are very high Hazard quotients based on acute (surface water), severe (sediment), and low effect (piscivores) ecological screening values were observed that exceeded 10 at several locations in the Western drainage way (before the confluence) and Eastern drainage way (to the most downstream location) Habitat quality was described as poor in the SLERA but given that the HQ's were so high, additional documentation is required to support the conclusion that chemical impacts are negligible compared to the physical impacts This documentation should include additional habitat quality/biological data from within these drainage ways.

Response: The conclusion that population- and community-level impacts are not likely to occur to potentially exposed ecological receptors in the drainage ways was based on multiple lines of evidence (including spatial extent and distribution of constituents, observations of wildlife, and habitat characteristics). However, based on clarification from USEPA, limited additional information specifically pertaining to the quality of habitat in the drainage ways will be obtained. The additional information will be provided in the RI report.

The language in the SLERA should also be changed to state that the conclusions presented therein are based on current conditions Because high magnitude HQ's were observed in the drainage ways, an increase in the quality of habitat would amplify the associated ecological risks Please modify the text to reflect that these calculations are based on current conditions at the site

Response: Statements that the evaluation was based on current conditions have been added to the Executive Summary and the body of the report.

Specific Calculation Comments

Page 51 Section 4.2.3. Surrogate receptors-mink and green heron Step 3A concluded that the mink is unlikely to access the pond in the western drainage way, risks to the mink are negligible. Risks are still present for the other mammalian piscivores that do not have this access limitation

Response: The comment is noted. However, the use of the mink as a surrogate species was previously approved by USEPA, and exposures of other mammalian piscivores in the vicinity of the site (e.g., muskrats) would be similarly limited by access limitations.

Table 2-1a. The ILH20 acute ESVs for nickel and zinc are incorrectly calculated.

Response: The ILH2O acute ESVs for nickel and zinc have been recalculated and a replacement table provided. In addition, related revisions to the text have also been made, and replacement pages similarly provided.

Table 2-1b. The equation for acute dissolved Pb is repeated twice.

Response: The repeated equation has been deleted and a replacement table provided.

Table 3-3a. The header for most sensitive piscivore NOAEL-based ESV is missing a reference to (b) in the notes section.

Response: The header has been revised and a replacement table provided.

Table 3-5b. The direct contact and piscivore water/diet HQs for the western background are incorrect

Response: The table has been revised per the comment and a replacement table provided. In addition, related revisions to the text have also been made, and replacement pages similarly provided.

Table 4-3c The SLERA and acute ESVs are flipped on page 2 of 2 from the table (calculations on this page are correct, however, using the ESVs from page 1 of 2)

Response: The table has been revised and a replacement table provided.

Table 4-4b NOAA PELs are different between pages 1 and 2 of the table. NOAA PELs on page 2 are incorrect

Response: The table has been revised and a replacement table provided.

Appendix D tables. The ingestion rates for the terrestrial receptors are described as based on allometric equations but the values given were derived from the Wildlife Exposure Handbook (EPA 1993).

Response: The ingestion rates used are based on allometric equations presented in the Wildlife Exposures Handbook. However, the maximum scenario ingestion rate for the deer mouse shown on Table D-3a was incorrect and a typographical error was noted in the equation for the food ingestion rate shown on Table D-2b. Replacement pages for these tables, associated tables (Table 3-4a and Table 4-9a), and associated text (pages 30 and 52) have been provided.

Table D-2c Mammal ingestion lists invertebrate and plant ingestion variables.

Response: The table has been revised and a replacement table provided.

If you have any questions concerning this submission, please do not hesitate to contact us.

Sincerely,

ENVIRON International Corporation

F. Ross Jones

F. Ross Jones, P.G.
Manager

FRJ:rms
R:\Client Project Files\Eagle Zinc-Hillsboro_21-7400E\Risk Assessment\SLERA_2004\ECO Risk Screening_2004\Response to Cmnts Ltr_FINAL 100504.doc

Attachment

cc: Thomas Krueger, Esq. – USEPA, Region 5
Rick Lanham – IEPA Bureau of Land
Chris English – CH2M Hill
John Ix, Esq. – Dechert
Lois Kimbol, Esq. – Dechert
Paul Harper – Eagle-Picher
Gordon Kuntz – Sherwin-Williams
Roy Ball – ENVIRON
Jeff Margolin – ENVIRON

Illinois Environmental Protection Agency

FACSIMILE TRANSMITTAL SHEET

TOTAL NO. OF PAGES INCLUDING COVER: 6	DATE: 1/19/06
TO: Dion Novack	FROM: Rick Lanham
COMPANY: USEPA	COMPANY: BOL / LCU
FAX NUMBER: 312 886 4071	SENDER'S FAX NUMBER: (217) 557-1165
PHONE NUMBER:	SENDER'S PHONE NUMBER: (217) 782-6762

MESSAGE:

Eagle Zinc

This is for future permanent track construction - references possibility of using existing tracks temporarily

RL

IEPA, BOL / LCU #24
1021 NORTH GRAND AVENUE EAST
P O BOX 19276
SPRINGFIELD, IL 62794-9276